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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,994	10/20/2003	Jun-hyuk Lee	1793.1023	1370

21171 7590 08/24/2006

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EXAMINER	
GOMA, TAWFIK A	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 08/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/687,994	LEE ET AL.	
	Examiner	Art Unit	
	Tawfik Goma	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *23-30 and 34* is/are allowed.

6)☒ Claim(s) *1-22,31-33 and 35-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-22, 31-33 and 35-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Seo (US 2002/0101808)

Regarding claims 1 and 16, Seo discloses an optical pickup system which outputs and controls optical power used for driving a laser diode (fig. 10), comprising: a monitor photo diode which selects a first gain selected from a first plurality of gains and which corresponds to a type of a disk to be driven according to an input signal (368, fig. 10 and par. 68), selects a second gain selected from a second plurality of gains and which corresponds to an optical power used for driving the laser diode (par. 79 and par. 81), and adjusts a detected optical power using the selected first and second gains to produce a monitoring signal for use in driving the laser diode (304, 306, fig. 10 and pars 68-69).

Regarding claim 8, Seo discloses an apparatus for controlling a monitor photo diode (fig. 10), which monitors an optical signal output from a laser diode for writing

data on or reading data from a disk (fig. 10), the apparatus comprising: a comparator which compares a voltage signal corresponding to a detected optical power output from the laser diode with a predetermined reference voltage signal (306, fig. 10); and a gain selector which selectively issues a gain controlled signal for use in controlling the optical power output from the laser diode, the outputted gain being a gain selected from a plurality of gains which corresponds with a type of the optical signal output from the laser diode (368, fig. 10 and par. 69).

Regarding claims 2 and 10, Seo discloses wherein the gain selector differentiates between when a first command is issued to output a preheating overpower to the laser diode and when a second command issued to output a write or a read power to the laser diode is issued, and issues a first gain when the first command is issued and a second gain when the second command is issued (Table 1 and par. 51).

Regarding claims 3, 11 and 18, Seo discloses wherein the second gain is set so that a predetermined cut-off voltage is output when the detected optical power is substantially the overpower when the first command is issued to output the overpower to the laser diode (par. 70).

Regarding claims 4, 12 and 19, Seo discloses wherein the second gain is set so that a predetermined cut-off voltage is output when the detected optical power is substantially the read or write power when the second command is issued to output the read or write power to the laser diode (par. 70).

Regarding claims 5, 13, and 20 wherein the monitor photo diode selects a greater gain when a command is issued to output a write or a read power to the laser diode than a gain when a command is issued to output a preheating overpower to the laser diode (Pwl and fig. 6a). Seo discloses that the preheating overpower gain (greater than the bias level power) can be set to a value of Pwl, which is lower than the value used for the write power Pw.

Regarding claim 6, Seo discloses wherein one of the first and second gains is selected according to a type of a power enable signal transmitted from an optical pickup controller for driving the laser diode (Table 1 and pars. 68-69).

Regarding claims 7, Seo discloses wherein the first gain is selected when the power enable signal is an overpower enable signal (Table 1 and par. 69).

Regarding claim 9, Seo further discloses an optical pickup controller and an output unit which adjusts a level of gain controlled signal output from the comparator to be compatible with a level of a signal input to the optical pickup controller and outputs the level-adjusted signal for use by the optical pickup controller.

Regarding claim 10, Seo further discloses an optical pickup controller that outputs a power enable signal for driving the laser diode (Table 1), wherein if the optical pickup controller outputs the power enable signal to be input to the laser diode, the gain selector issues the first gain (Pwh, Pwl), and if the power enable signal is not input to the laser diode, the gain selector issues the second gain (Pw, and par. 65).

Regarding claim 15, Seo further discloses wherein the power enable signal is an overpower enable signal input into the laser diode from the optical pickup controller (Table 1).

Regarding claims 17, Seo further discloses wherein the first gain varies depending on whether the disk is a CD or a DVD (par. 68), and the second gain varies depending on whether a first command is issued to output a preheating overpower to the laser diode or a second command is issued to output a write or a read power to the laser diode is issued (par. 69 and Table 1).

Regarding claim 21, Seo further discloses an optical pickup controller that transmits a power enable signal for driving the laser diode, wherein the second gain is selected using the power enable signal when transmitted from the optical pickup controller for driving the laser diode (Table 1, and pars. 51 and 69).

Regarding claim 22, Seo further discloses controlling a controller than transmits an overpower enable signal (368, fig. 10), wherein the second gain is selected using the overpower enable signal transmitted from the controller (Table 1, and pars. 51 and 69).

Regarding claims 31, 32, 33, and 44, Seo further discloses a controller which controls the optical pickup system to transfer data with respect to the disk and which drives the laser diode according to the monitoring signal (pars. 61 and 62).

Regarding claims 35, Seo discloses an apparatus for controlling a monitor photo diode (fig. 10), the apparatus comprising: a detection unit that determines a type of optical signal to be output from a laser diode (par. 69 and Front Monitor), and adjusts a

detected optical power signal output from the laser diode according to the determined type of the optical signal (par. 51 and Table 1); and a signal output unit which uses the adjusted optical power signal to generate a monitoring signal for use in maintaining a power level of the optical signal (par. 70 and fig. 10).

Regarding claim 36, Seo discloses wherein the detection unit receives an input signal corresponding to the type of optical signal to be output (368, fig. 10, AP type, fig. 6a and Table 1), selects an adjustment factor from a plurality of adjustment factors corresponding to the input signal (par. 51 and par. 69), and adjusts the detected optical power signal according to the selected adjustment factor (par. 69).

Regarding claim 37, Seo discloses wherein the input signal indicates a type of disk on which light emitted by the laser diode is being received (par. 68), and the plurality of adjustment factors includes a first adjustment factor corresponding to a first type of disk and a second adjustment factor corresponding to a second type of disk other than the first type (CD, DVD, par. 68).

Regarding claim 38, Seo discloses wherein the input signal indicates a type of optical operation being performed by light emitted by the laser diode with respect to a disk (par. 51 and Table 1), and the plurality of adjustment factors includes a first adjustment factor corresponding to an optical operation having a first maximum laser diode power level and a second adjustment factor corresponding to an optical operation having a second maximum laser diode power level other than the first maximum laser diode power level (Pw, Pwh, par. 65 and fig. 6b).

Regarding claim 39, Seo further discloses wherein the first maximum laser diode power level corresponds to a preheating overpower operation (fig. 6b, write power), and the second maximum laser diode power level corresponds to a read or a write operation (first and last pulses, fig. 6b).

Regarding claim 40, Seo further discloses wherein the determined type of the optical signal has a maximum power (Table 1 and par. 70), and the detection unit adjusts the detected optical power as compared to the maximum power (par. 70).

Regarding claim 41, Seo further discloses wherein the monitoring signal has an inverse relationship with the maximum power such that, if the detected optical power is equal to or greater than the maximum power, a minimum signal is output (par. 70). The comparator can output a 0 if the monitoring signal matches the reference value.

Regarding claim 42, Seo discloses wherein the maximum power changes according to the type of optical signal such that, for a first type of optical signal, the maximum power is a first level, and for a second type of optical signal, the maximum power is a second level other than the first level (par. 68).

Regarding claim 43, Seo discloses wherein: the detection unit adjusts the detected optical power using a first relationship for a first type of optical signal, and adjusts the detected optical power using a second relationship for a second type of optical signal, and the first relationship is other than the second relationship (par. 68).

Allowable Subject Matter

Claims 23-30 and 34 are allowed. The following is a statement of reasons for the indication of allowable subject matter: Claims 23-30 and 34 are allowed over the prior

art of record, because the prior art of record, including closest US patent application (US 2002/0101808) and US Patent Seo (US 7057990) considered individually or in combination fail to disclose or fairly teach an apparatus for controlling a monitor photo diode with a medium gain selector and an operation gain selector, wherein the output gains of the operation gain selector are multiplied by the gain of the medium gain selector.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Seo (US 7057990) discloses a power control of a laser diode in an optical recording/playback system using a variable gain amplifier. Imai (US 5742566) discloses an optical recording system that has automatic power control based on the temperature of the diode.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tawfik Goma whose telephone number is (571) 272-4206. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

T. Goma
8/17/2006

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